

REMARKS

This paper is submitted in reply to the Office Action dated January 2, 2008, within the three-month period for response. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 1-4, 6-9, 11-12, 16-21, 23-25, 27-28 and 31-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2004/0199632 by Romero et al. ("Romero") in view of U.S. Patent Application Publication No. 2004/0117476 by Steele et al. ("Steele"). Furthermore, claims 5, 10, 13-15, 22, 26 and 29-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Romero in view of Steele and further in view of U.S. Patent No. 6,260,068 to Zalewski et al.

Applicant respectfully traverses the Examiner's rejections to the extent that they are maintained. Applicant has canceled claims 16 through 35 and amended independent claim 1. Applicant had previously canceled claim 36. Applicant has also amended the Abstract to reflect the remaining independent claim 1. Applicant is not conceding that the subject matter encompassed by the amended and canceled claims prior to this Amendment is not patentable over the art cited by the Examiner. The Amendments are made solely to facilitate expeditious prosecution of the remaining claims. Applicant respectfully reserves the right to pursue additional claims, including the subject matter encompassed by continuing applications and/or divisional patent applications. Applicant further submits that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed.

Now turning to the subject Office Action, the Examiner will note that independent claim 1 has been amended to recite a method for managing usage of a plurality of standby resources included within a plurality of computers in a capacity on demand computer system, wherein each computer of the plurality of computers includes at least one standby resource of the plurality of standby resources physically dispersed thereto, wherein a source computer among the plurality of computers includes a first plurality of standby resources physically dispersed thereto, a first subset of which are available and a second

subset of which are unavailable for use by the source computer, and wherein a destination computer among the plurality of computers includes a second plurality of standby resources physically dispersed thereto, a first subset of which are available and a second subset of which are unavailable for use by the destination computer. The method comprises limiting availability to a first standby resource included within the first subset of standby resources in the first plurality of standby resources physically dispersed to the source computer, and, in connection with limiting availability to the first standby resources, programmatically transferring the availability to a second standby resource included within the second subset of standby resources in the second plurality of standby resources physically dispersed to the destination computer such that an aggregate total of standby resources made available to the source and destination computers is maintained after the availability has been transferred, wherein the source and destination computers are geographically dispersed from one another.

Support for the amendment that recites a capacity on demand computer system may be found, for example, in the Background, throughout the Specification, and in paragraph [0067]. Support for the amendment that recites the plurality of standby resources physically dispersed throughout each computer of the plurality of computers, wherein a source computer includes a first plurality of standby resources, a first subset of which are available and a second subsets of which are unavailable for use by the source computer, may be found, for example, in paragraph [0025], in FIGS. 3A and 3B, paragraphs [0039] through [0044], paragraphs [0048] through [0050], paragraphs [0058] through [0059], and in paragraph [0065]. Support for the amendment that recites a destination computer among the plurality of computers that includes a second plurality of standby resources physically dispersed thereto, a first subset of which are available and a second subset of which are unavailable for use by the destination computer, may be also found, for example, in paragraph [0025], FIGS. 3A and 3B, paragraphs [0039] through [0044], paragraphs [0046] and [0048], paragraph [0058], and in paragraph [0064]. Support for the amendment that recites limiting availability to a first standby resource included within the first subset of standby resources in the first plurality of standby resources physically dispersed to the source computer may be found, for example, in paragraph [0042], paragraphs [0050] through [0052], paragraph [0060], and in paragraph [0065]. Support for the amendment

that recites programmatically transferring the availability of resources to the destination computer such that the aggregate total of resources available to the source and destination computers is maintained in connection with limiting availability to the first standby resource may be found, for example, in paragraphs [0050] through [0055], paragraphs [0060] through [0063], paragraphs [0064] through [0066], paragraphs [0067] through [0068], and in FIGS. 4 through 6.

As discussed in Applicant's prior responses, Applicant's invention addresses a problem found in conventional capacity on demand system where, due to the fact that standby resources such as processors are constructed integrally within their respective computers, it is not feasible to physically remove and reapportion standby processors as between different physical computers. As a consequence, a scenario can develop where a customer having two computers (each having a distinct set of standby resources) must activate additional standby resources on one computer to handle an increased workload, while active standby resources of another computer remain underutilized. Such a situation is particularly troublesome in the instances where the computers are geographically dispersed and/or are subjected to peak work loads at different times, as while a customer may have enough active standby resources distributed among multiple computers to handle that customer's overall workload, inefficiencies may nonetheless occur at particular times due to the inability to physically redistribute standby resources between different computers. Applicant's claimed invention addresses this situation by enabling standby resources physically disposed in one computer to be deactivated in conjunction with the activation of standby resources physically disposed in another computer that is geographically dispersed from the other computer, such that the aggregate total of activated standby resources is kept constant after the transfer of availability.

Thus, for example, consider a customer who has two geographically dispersed computers, computers A and B, where computer A has four standby processors, of which the customer has activated three of those processors, and computer B has four standby processors, of which the customer has activated two of those processors. As described in the specification, in many capacity on demand systems, a customer is charged a fee for the activation of standby resources such as standby processors, so in this situation, the

customer would be paying for a total of five standby processors. If, for example, computer A becomes overloaded with work, and the customer desires to increase that computer's performance to handle the increased workload, the customer can decide to pay for activation of the fourth standby processor in computer A, resulting in a greater cost to the customer. In conventional capacity on demand systems, the customer would be required to incur such charges even if computer B was underloaded and the two activated standby processors on computer B were being underutilized.

In contrast, in embodiments consistent with the invention, the customer may be permitted to transfer the availability of a standby processor in computer B to computer A, e.g., so that computer A has four activated standby processors and computer B only has one activated standby processor. Thus, while computer A now has an additional standby processor activated to handle the increased workload of that computer, the aggregate total of standby processors activated by the customer across computers A and B is maintained – a total of five standby processors are activated both before and after the transfer. The customer thus is able to effectively take advantage of additional capacity without necessarily incurring the cost of activating additional standby resources.

It is important to note however, that the transfer of availability between two geographically dispersed computers does not involve any transfer of the physical resources themselves, or the workload of such physical resources, between the two computers. The transfer of availability between two computers typically means that a physical resource on one computer, which was previously deactivated and likely dormant, is activated, while a different physical resource on the other computer, which was previously activated, is deactivated and rendered unusable by the other computer. From the standpoint of the physical computers, the number of physical resources in those computers never changes. In addition, no workload is being transferred between the computers.

In asserting the §103(a) rejection of independent claim 1, the Examiner relies upon Romero and Steele. The Examiner asserts that Romero teaches a method for automatically balancing processors across partitions of a partitioned server using reserve processors that reduce the capacity of a partition by removing one or more active processor in order to

increase the associated reserve processor pool and make a processor available for activation in another partition. See Abstract and page 4, paragraph [0037]. The Examiner concedes that Romero does not specifically disclose that the source and destination computers are geographically dispersed from one another, and alleges that Steele discloses geographically dispersed source and destination computers. Steele teaches a multi-enterprise network of computers and other resources partitioned into virtual local area networks (VLANs) in which there may be a set of spare resources available to each VLAN. See page 1, paragraph [0008]. When a VLAN needs a spare resource, a spare resource is allocated from the spare resources available to that VLAN or the spare resources from another VLAN. See page 3, paragraph [0032]. However, neither Romero nor Steele, taken alone or in combination, disclose or suggest all the aspects of amended independent claim 1.

First, with respect to Romero, Applicant respectfully submits that the Examiner also fails to acknowledge that Romero does not disclose a plurality of computers or specifically a source and destination computer, as required by claim 1. Instead, Romero is concerned exclusively with a single partitioned server, “including a device or computer system” or “a device or apparatus containing CPUs.” See page 3, paragraph [0025]. As discussed in the instant Application, e.g., at paragraph [0018], the present invention teaches transferring entitlement to standby resources “as between respective computers.” Thus, as the Examiner correctly notes, Romero does not disclose that the source and destination computers are geographically dispersed from one another, namely because Romero does not disclose more than one computer at all. Romero is, in fact, directed to a partitioned server that is completely different and inapposite to the capacity on demand computer system of the claimed invention.

Steele, however, does not remedy the shortcomings of Romero. Steele, in fact, is directed towards a completely different type of problem than the present invention – namely maintaining an always-on-internet-infrastructure. See page 1, paragraph [0010]. Steele, at most, discloses replacing a failing resource with a spare resource. See page 3, paragraph [0032], page 4, paragraph [0042], and page 7, paragraph [0063]. Thus, Steele in no way suggests or discloses a capacity on demand computer system consistent with the

present invention because it is directed to a completely different problem. Steele may reallocate a spare resource from a first VLAN to a second VLAN, but by doing so, the physical resource itself is reallocated from the first VLAN to the second VLAN, so that the physical resource is performing work for the second VLAN rather than the first VLAN. The claimed invention, however, programmatically transfers the availability of a standby resource from a source computer to a destination computer. Therefore, the claimed invention transfers the availability of the resources without physically changing the location of resources in the system, i.e., without transferring the resources themselves. Thus, for example, as a result of the transfer of availability from the source to the destination computer in the manner recited in claim 1, a resource that was once performing work for the source computer is not now performing work for the destination computer. As such, Applicant respectfully submits that the proposed combination of Romero and Steele does not suggest or disclose each and every feature of amended independent claim 1, so no *prima facie* case of obviousness exists with respect to amended independent claim 1.

Applicant also respectfully submits that Romero in combination with Steele does not suggest other various aspects of the claimed invention, including most notably that the aggregate number of available standby resources in the system is maintained as a result of the transfer of availability, and that no physical transfer or transfer of workload occurs between the computers in the system. The claimed invention includes a source computer and a destination computer, each with a plurality of standby resources. The computers also include first subsets of standby resources that are available for use by the computers and second subsets of standby resources that are unavailable for use by the computers. The claimed invention limits availability of a first standby resource in the first subset of the source computer, and, in connection with limiting the availability to the first standby resource, transfers that availability to a second standby resource in the second subset of the destination computer. As such, the aggregate number of standby resources in the source and destination computers has not changed, only the availability of the standby resources has changed.

Neither Romero nor Steele suggest or disclose, in combination and/or alone, the above recited features of the amended independent claim 1. Romero and Steele, in combination, at best disclose a first partitioned computer and second partitioned computer that are capable of activating backup resources in response to resource failure. If there are no backup resources for the second partitioned computer and it experiences a failure, Romero and Steele suggest that a backup resource can be physically removed from the first partitioned computer and attached to the second partitioned computer. As such, Romero and Steel disclose a system that transfers resources and not the availability of resources, a system that transfers resources between computers only in response to resource failure, and a system that experiences a net decrease in the amount of resources available for the system when the resource is transferred. As such, neither Romero or Steel suggest or disclose further aspects of the amended independent claim 1, particularly including 1) first and second subsets of the plurality of resources in both the source and destination computers, 2) transferring the availability from the first resource of the first subset of standby resources in the source computer to the second resource of the second subset of standby resources in the destination computer in connection with limiting availability to the first resource, and 3) maintaining an aggregate total of standby resources available to the source and destination computers after the availability has been transferred.

As such, Applicant respectfully submits that there is no objective reason for a person of ordinary skill in the art to modify Romero and/or Steele to achieve the claimed invention, despite the Examiner's assertions to the contrary. Applicant therefore respectfully submits that amended independent claim 1 is non-obvious over Romero in combination with Steele, and the rejection should be withdrawn. The prior art of record does not disclose or suggest programmatically transferring the availability of standby resources from various subsets of a plurality of resources between a geographically dispersed source computer and destination computer without physically changing the location of the standby resources or altering the aggregate total of standby resources in the source and destination computers. Furthermore, no objective reason has been presented as to why one of ordinary skill in the art would be motivated to modify the prior art to incorporate any such capability. Reconsideration and allowance of independent claim 1, and of claims 2-15 that depend therefrom, are therefore respectfully requested.

Next, turning to the rejections of claims 16-35, the §103(a) rejections of these claims have been rendered moot by the virtue of the cancellation of these claims, and should be withdrawn.

As a final matter, Applicant traverses the Examiner's rejections of dependent claims 2-15 based upon their dependency on the aforementioned independent claim 1. Nonetheless, Applicant notes that a number of these claims recite additional features that further distinguish these claims from the references cited by the Examiner. However, in the interest of prosecutorial economy, these claims will not be addressed separately herein.

In summary, Applicant respectfully submits that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23 3000.

Respectfully submitted,

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Date

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